MECHANISMS OF VASODILATATION

an official Satellite Symposium
of the XXIXth International Congress
of Physiological Sciences

Sydney, Australia

August 25-27, 1983

SCIENTIFIC PROGRAM

AFTERNOON SESSION

Neurohumoral Mediators: The Last Three Years
Chairman, I. S. de la Lande and H. Tsuru

1. Catecholamines
   H. Majewski
2. Peptides
   J. M. Lundberg
3. Histamine
   H. Tsuru

COFFEE BREAK AND POSTER SESSION B (60 minutes)

Contraction-induced reflex vasodilation.
O. Beaty III, B J Halley

Bile salts impair smooth muscle responsiveness to norepinephrine.
L. Bomzon, J P M. Finberg, O. S. Better

Factors involved in the postexercise potentiation of the vasodilator effects of acetylcholine in skeletal muscle.
H. Janczewska

Effect of stimulating atrial receptors on renal blood flow
C. T Kappagoda, F Karim

Autonomic vascular control by vasoactive intestinal polypeptide, neuropeptide Y and substance P.
J. M. Lundberg, A. Anggård, L. Lundblad

β_2-Adrenergic control of central hemodynamics in hemorrhage.
J. Lundvall, D. Gustafson

Presynaptic α_2-adrenoceptors modulate norepinephrine release in the rabbit.
H. Majewski, L. Hedler, K. Starke

Effect of prazosin on norepinephrine release and metabolism in the rabbit ear artery
D. A. S. Parker, J. A. Thompson, I. S. de la Lande

Mechanisms of 5-hydroxytryptamine-induced vasodilatation in the dog femoral and common carotid arterial circulations.
C. A. Phillips, E. J. Mylecharane, J. K. Markus, J. Shaw

Thursday, August 25

9:00 a.m. WELCOME
J Shaw

MORNING SESSION

Endothelium
Chairman, R. F. Furchgott and M. J. Rand

1. Endothelium-dependent responses: the last three years
   R. F. Furchgott
2. Endothelium and vasoconstrictor responses
   R. Seccombe
3. Endothelium and hypoxic responses
   E. Bassenge

COFFEE BREAK AND POSTER SESSION A (60 minutes)

Inhibitors of prostaglandin synthesis: Effects on the renal blood flow responses to vasoactive substances in conscious dogs.
W. P. Anderson, S. E. Selig

Endothelium-dependent vasodilatation demonstrated in vivo.
J. A. Angus, T. M. Cocks, M. Le Duc, G. R. Campbell

Hypoxic dilation of coronary arteries in vitro mediated by endothelium.
R. Busse, U. Pohl, J. Holtz, E. Bassenge

Antagonists of endothelial cell-mediated relaxation of coronary arterial smooth muscle
T. M. Cocks, J. A. Angus

Inhibitory role of the endothelium in response of isolated canine coronary arteries to platelets.
R. A. Cohen, J. T. Shepherd, P. M. Vanhoutte

Mechanisms which determine the renal vascular response to arachidonic acid.
L. P. Feigen

Endothelium-dependent relaxation of rabbit aorta by acetylcholine and A23187 is associated with an increase in cyclic GMP.
R. F. Furchgott, D. Jothianandan

Pharmacological characterization of histamine receptors mediating relaxation of rabbit veins.
H. Tsuru

Presence of a vasodilating contaminant in the perfusion medium for isolated perfused rat kidneys.
Z. Zhegu, B. R. Bender, M. Mayer

Urea — a selective modulator of receptor-mediated vascular and nonvascular smooth muscle response.
D. Zhelyazkov, N. Temnyalov

4. Serotonin
   R. C. Webb
5. Metabolites of arachidonic acid
   L. P. Feigen

Role of cyclic GMP in endothelial-dependent relaxation of canine renal, cerebral and mesenteric vessels.
S. Greenberg, F. Landre, L. Prevy, W. Blackburn, I. Jeruses, P. Kadowitz, D. Holcombe

Vasodilatation by vasoactive intestinal polypeptide and substance P: Dependency on intact endothelium.
J. Hanko, J. E. Hardebo, C. Owman

Production of 6-keto PGF1α by aorta in murine lupus.
J. V. Levy

Endothelium removal enhances norepinephrine vasoconstriction.
C. Verrecchia, R. Seccombe, J. Sirdar

4. Endothelium and platelets
   R. A. Cohen
5. Endothelium-dependent vasodilatation in vivo
   J. A. Angus

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Friday, August 26

MORNING SESSION

8:30 a.m. Vascular Smooth Muscle
Chairman, D. F. Bohr and T. B. Bolton

1. Calcium-dependent regulatory mechanisms
   R. A. Murphy
2. Vascular metabolism and energetics
   R. J. Paul
3. Autonomic receptors and cell membrane potential
   T. B. Bolton

COFFEE BREAK AND POSTER SESSION C (60 minutes)

Dihydropyridine receptor in rat brain labeled with [^{3}H]nimodipine
P. Bellemann, A. Schade, R. Towart

Effects of activation of muscarinic and adreno-receptors on membrane properties of mammalian arteries studied by electrophysiological and radioactive tracer flux techniques
T. B. Bolton, R. J. Lang, L. H. Clapp

Receptors mediating vasoactive actions of 5-hydroxytryptamine on the rabbit ear artery.
I. S. de la Lande, B. J. Stanton, V. K. Lungershausen

Calcium-dependent regulatory mechanisms in relaxation of arterial smooth muscle.
W. T. Gerthoffer, R. A. Murphy

Characterization of relaxant responses to transmural stimulation in isolated blood vessels.
J. E. Hardebo, J. Hanko, C. Owman

Prior exposure to serotonin attenuates norepinephrine contraction in dog mesenteric artery
R. S. Moreland, D. F. Bohr

Raised intracellular sodium may not be a modulator of tone in resistance vessels.
M. J. Mulvany, C. Aalkjaer, T. T. Petersen

Vascular metabolism and energetics: Current perspectives
R. J. Paul, J. M. Krisanda, R. Lynch

Effects of calcium antagonists on action potentials and contractions in peripheral and cerebral arterial smooth muscle.
A. Surprenant

Subtypes of β-adrenergic receptors in calf coronary arteries.
D. E. Vatner, C. J. Homcy, M. Connole, T. M. Knight, W. T. Manders, S. F. Vatner

Ouabain inhibits pulmonary vasodilation.
N. F. Voelkel, M. Morganroth, J. T. Reeves

Canine coronary artery: Effects of inhibitors of extraneuronal uptake or catechol-O-methyltransferase on responses to catecholamines.
J. C. Wanstall, S. R. O'Donnell

Spontaneous activity and response to catecholamines in portal veins from hypothyroid rats.
T. L. Young, M. E. Story, J. N. Pennefather

4. Cell membrane potential and calcium entry
   A. Surprenant
5. Intracellular sodium and vascular resistance
   M. J. Mulvany

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AFTERNOON SESSION

Cerebral Blood Vessels
Chairmen, W. Anderson and D. Heistad

1. Blood components
   K. Nakayama
2. Purinergic and peptidergic mechanisms
   J. E. Hardebo

COFFEE BREAK AND POSTER SESSION D (60 minutes)

Four locations for action by histamine in cerebral arterioles.
P. M. Gross

Neurotransmitters and cerebral metabolism-blood flow coupling.
P. M. Gross

In vitro and in situ evidence for dilatatory histamine receptors in cat cerebral arteries.
P. M. Gross, L. Edvinsson

Comparison between mechanisms for noradrenergic constriction and histaminergic dilatation in cat cerebral vessels.
P. M. Gross, A. M. Harper, G. M. Teasdale

Importance of blood-brain barrier in revealing cerebral vasodilatory responses to carotid administration of histamine.
P. M. Gross, A. M. Harper, G. M. Teasdale

Purine P1 and P2 receptors in the cerebral circulation.
J. E. Hardebo, J. Hanko, C. Owman

Effects of nimodipine on cerebral vessels.
D. D. Heistad, C. W. Haws

Prostacyclin and vasodilator mechanisms in the cerebral circulation.
T. A. McCalden, R. G. Nath, K. Thiele

Potentiation of stretch activation of cerebral artery by hemolysate and platelets and the inhibitory action of calcium blockers.
K. Nakayama

Saturday, August 27

MORNING SESSION

8:30 a.m. Coronary Blood Vessels
Chairmen, M. Fujiwara and G. Dusting

1. Alpha-adrenergic receptors and coronary blood vessels
   G. R. Heyndrickx
2. Beta-adrenergic regulation of coronary function
   S. F. Vatner
3. Prostacyclin and coronary diameter
   G. J. Dusting

COFFEE BREAK AND POSTER SESSION E (60 minutes)

Influence of prostacyclin on coronary artery diameter.
G. J. Dusting, J. A. Angus

Coronary vascular relaxation in deoxycorticosterone acetate hypertensive rats.
E. C. Hagen, R. C. Webb

Phentolamine and prazosin potentiate the exercise-induced coronary hyperemic response through different mechanisms in conscious dogs.
G. R. Heyndrickx, J. P. Vilaine

Effects of adenosine, dipyridamole and brief coronary occlusions on large coronary arteries.
T. H. Hintze, S. F. Vatner

Coronary vasodilation to nitroglycerin and nitroprusside is not mediated by prostaglandins.
G. Kaley, M. J. Panzenbeck

Substitution of amino group in C6 of adenosine affects coronary blood flow but not heart rate in the perfused rabbit heart.
K. Kurahashi, S. Odmura, M. Fujiwara

Direct versus reflex effects of serotonin on coronary and systemic dynamics in conscious dogs.
M. Lavallee, D. Knight, S. F. Vatner

Action of angiotensin on coronary blood flow in man. Flow modifications after captopril and metabolic and alpha-adrenergic stimulation.
G. Mannoli, R. C. Zennaro, A. Bertani

Evidence that endogenous nickel release may be responsible for ischemic coronary vasospasm in the dog heart.
G. Rubanyi, L. Ligeti, A. Koller, A. G. B. Kovach

Hypoxic coronary vasoconstriction: Interactions of vascular prostaglandin synthesis and beta-adrenergic mechanisms.
G. Rubanyi, R. J. Paul

Recruitment of myocardial capillaries occurs only with respect to their red cell content.
H. Tillmanns, M. Steinhausen, A. Dart, N. Parekh, F. Möller, H. Leinberger, W. Kübler

Dilation of large coronary arteries by β1-stimulation and constriction by β1-blockade.
S. F. Vatner, D. Knight, T. Hintze

4. Purinergic mechanisms
   T. H. Hintze
5. Nickel and coronary vasospasm
   G. Rubanyi

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AFTERNOON SESSION

New Drugs
Chairmen, J. N. Cohn and J. Shaw

1. Buflomedil
   P. M. Vanhoutte
2. Ketanserin
   J. M. Van Nueten
3. Molsidomine
   O. Thulesius
4. Nimodipine
   T. McCalden

COFFEE BREAK AND POSTER SESSION F (60 minutes)

Mechanisms for favorable effects of vasodilator therapy in man.
A. P. Avolio, T. Yaginuma, M. F. O'Rourke

Comparative studies of the effects of organic nitrates, calcium antagonists and molsidomine on the electrical activity and isometric tension of isolated vascular smooth muscle.
G. Biamino, J. Noring

Measurement of vascular compliance as a guide to vasoconstrictor and vasodilator stimuli.
J. N. Cohn, S. M. Finkelstein, V. R. Collins

Hemodynamic effects of oral molsidomine in pump failure complicating myocardial infarction.
S. Drajer, H. Cercos, H. Torres, A. Vazquez, J. L. Cohn, N. Romero, G. Fierman, S. Sosler, C. Mermohn

Greater reduction of vascular resistance following calcium entry blockade as compared to reperfusion after arterial occlusion in established essential hypertension.
U. L. Hulthén, P. Bolli, F. R. Bühler

Calcium channel blockade with nimodipine and vasodilation in the baboon cerebral circulation.
T. A. McCalden, R. G. Nath, K. Thiele

Renal artery vasodilator action of molsidomine.
O. Thulesius, A. O. Elkhawad, A. Al-Khan

Postjunctional α2-adrenoceptors in the vasculature of the human forearm.
P. van Brummelen, F. Vermey, P. B. M. W. M. Timmermans, P. A. van Zwieten

Effects of buflomedil on the responsiveness of canine vascular smooth muscle.
P. M. Vanhoutte, L. L. Aarhus, R. R. Lorenz, T. J. Verbeuren

Serotonergic amplification mechanisms in vascular tissues.
J. M. Van Nueten

CONCLUDING SESSION

What About Man?
Chairmen, J. T. Shepherd and O. Thulesius

1. Assessment of vasodilatation in man
   J. N. Cohn
2. Calcium-entry blockers
   U. L. Hulthén
3. Postjunctional alpha-adrenoceptors
   P. van Brummelen
4. Concluding remarks: Where should we go from here?
   J. T. Shepherd

CLOSING REMARKS
P. M. Vanhoutte

ADJOURNMENT

Source: https://www.industrydocuments.ucsf.edu/docs/gxvb0000